



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------------|
| 10/522,554 | 12/01/2005 | Yoshio Kaji | Q85975 | 8537 |
| 23373 7590 09/28/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | EXAMINER MAKI, STEVEN D | |
| | | | ART UNIT 1733 | PAPER NUMBER |
| | | | MAIL DATE 09/28/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/522,554 | Applicant(s) KAJI, YOSHIO | |
| | Examiner Steven D. Maki | Art Unit 1733 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>042707,012705</u> . | 6) <input type="checkbox"/> Other: ____. |

1) Figures 11A-11D should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2) The disclosure is objected to because of the following informalities: The specification refers to the claims. The reference to the claims should be appropriately deleted. The abstract is two paragraphs instead of one paragraph.

Appropriate correction is required.

3) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Japan 206

4) **Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Japan 206 (JP 61-081206).**

See abstract and figures, especially figure 1.

Wise

5) **Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Wise (US 5,456,301).**

Wise discloses a pneumatic vehicle tire with a tread comprising blocks, circumferential grooves and lateral grooves. Wise provides the central block with a concave relief 122 at the leading and trailing edges. See figures 6 and 7. Since the relief 122 is concave, it is defined by a radius of curvature external to the tire. Since the upper surface of the block is part of the cylindrical tread surface (figures 1-4), the block surface region between the concave reliefs 122 is an "arcuate surface" defined by the internal radius of the tire.

The claimed tire is anticipated by Wise's tire wherein the blocks have a surface configuration as shown in figures 6 and 7.

Lopez et al

6) **Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Lopez et al (US 2004/0045649).**

Lopez et al discloses a heavy vehicle tire (pneumatic tire) with a tread comprising blocks, circumferential grooves and lateral grooves. The block has a specified surface shape for maintaining the average rate of wear while avoiding occurrence of irregular wear. The central block has a contact face 11 comprising surface part 111 and surface part 113. As can be seen from figure 3, the surface part 11 is concave (dented and

Art Unit: 1733

defined by an external radius) so as to reduce the height of the block from a "central portion" to the block edge.

The claimed tire is anticipated by the block having the surface configuration as shown in figure 3.

7) Claims 1, 2, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lopez et al and optionally Japan 221 (JP 09-058221).

Lopez is considered to anticipate claim 1. In any event, it would have been an obvious alternative to provide the upper surface of Lopez et al's block such that it comprises two concave curve surfaces 111, 113 instead of one convex curve surface 113 and one concave curve surface 111 since (1) Lopez et al teaches addressing the problem of wear by reducing volume on both sides of the block, (2) Lopez et al describes using a curved concave surface 111 to obtain such a desired reduction in volume (figure 3) and teaches that the same type of curve (albeit convex) may be used on both sides of the block (figure 2) and optionally (3) Japan 221 show that two concave surfaces may be used for a the upper surface of a block in a tire which reduced wear is desired. As to claim 2, both Lopez et al and the optional Japan 221 teach forming the peak of the block using a convex surface. See for example figure 2 of Lopez et al. Japan 221 also teaches joining two concave surfaces with a convex surface.

As to claim 5, it would have been obvious to one of ordinary skill in the art to provide Lopez et al's blocks with low regions such that $hL \leq 20\%d$ and $L \geq H/5$ are satisfied since Lopez et al teaches providing the greatest volume reduction near the

leading and trailing edges (figure 3) - a greater volume reduction extending over a longer length when a concave surface is used.

8) Claims 3-4, 6-7 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lopez et al and optionally Japan 221 as applied above and further in view of Comps (US 2002/0170644).

As to claim 3, it would have been obvious to one of ordinary skill in the art to provide Lopez et al's heavy vehicle tire such that the block height H is 4-6% of the tire radius R depending on the desired tire size since (1) Lopez et al teaches lowering the leading and trailing edges of a central block with respect to block height by reducing front volume V and rear volume $V1$ as shown in figure 3 to address the problem of wear and (2) Comps teaches using blocks having a height of at least 60 mm (e.g. 80 mm) for a pneumatic tire for a construction vehicle (heavy vehicle) having a size of 44/80R57. One of ordinary skill in the art would readily understand "44/80R57" as describing a rim diameter of 57 inches (1448 mm), a section width of 44 inches (1118 mm) and an aspect ratio of 80%. The section height of the tire is therefore (1112 mm) (0.80) = 894 mm. The tire diameter is therefore $1448 \text{ mm} + 894 \text{ mm} + 894 \text{ mm} = 3236 \text{ mm}$. The tire radius is therefore $3236 \text{ mm} / 2 = 1618 \text{ mm}$. With a block height of 80 mm, the block height is $80 \text{ mm} / 1618 \text{ mm} \times 100\% = 4.9\%$ tire radius (falling within the claimed range of 4-6%).

As to claim 4, it would have been obvious to one of ordinary skill in the art to provide Lopez et al's heavy vehicle tire such that the height difference $d = H - h_e = 2-7\%$ block height H since (1) Lopez et al teaches lowering the leading and trailing edges of a

Art Unit: 1733

central block with respect to block height by reducing front volume V and rear volume V1 as shown in figure 3 to address the problem of wear wherein the center of gravity of the volume is located at a distance HG of 0.1-1.0 mm, (2) Lopez et al identifies a distance "d" of 0.3-3.0 mm as being the height difference in an alternative embodiment (paragraph 54) and (3) Comps teaches using blocks having a height of at least 60 mm (e.g. 80 mm) for a pneumatic tire for a construction vehicle (heavy vehicle) having a size of 44/80R57 (paragraphs 9, 23, 39-41). With a block height of 80 mm and a height difference d of 3 mm, the height difference $d = 3 \text{ mm} / 80 \text{ mm} \times 100\% = 3.8\%$ (falling within the claimed range of 2-7%).

As to claims 6-7 and 9-11, note examiner's comments on claims 3, 4 and 5.

Remarks

- 9) The remaining references are of interest.
- 10) No claim is allowed.
- 11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1733

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki
September 26, 2007


STEVEN D. MAKI 9-26-07
PRIMARY EXAMINER